

ARTICLE PROTECTED BY THERMAL BARRIER COATING
HAVING A SINTERING INHIBITOR, AND ITS FABRICATION

ABSTRACT OF THE DISCLOSURE

An article protected by a thermal barrier coating system includes a substrate having a substrate surface, and a thermal barrier coating system overlying the substrate. The thermal barrier coating system has a thermal barrier coating formed of a thermal barrier coating material arranged as a plurality of columnar grains extending generally perpendicular to the substrate surface and having grain surfaces. A sintering inhibitor is within the columnar grains, either uniformly distributed or concentrated at the grain surfaces. The sintering inhibitor is lanthanum oxide, lanthanum chromate, chromium oxide, and/or yttrium chromate, mixtures thereof, mixtures thereof with aluminum oxide, modifications thereof wherein cobalt or manganese is substituted for chromium, precursors thereof, and reaction products thereof.